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## Description

This invention relates generally to corrugated containers, and more particularly relates to such containers for holding flowable granulated materials and flowable gelatinous substances. The granulated materials flow almost like fluids, and the gelatinous substances have substantial rates of cold flow, some of these materials being of relatively high density.

Containers for such products are usually made in sizes of several feet on each dimension, and when holding materials of the nature described can weigh hundreds of pounds. Typically, such containers may be made from 600 lb (272 kg). test double wall corrugated material or 1100 lb (498 kg). test triple wall corrugated material. Even such heavy duty containers when filled with the flowable materials and stacked two to four containers high for shipment are not immune from bulging of the container walls in the bottom units, with the attendant potential of container rupture or column failure which causes the upper boxes to topple over. Consequently, it has been necessary in the past to either compartmentalize such containers as load distributing structures, or to enclose such containers in wooden frames to provide wall support therefor.

The novel containers embodying the invention are capable not only of eliminating the necessity for using wooden frames or compartmentalizing the containers, but also of permitting reduction in the necessary strength of the container wall structures from the previously mentioned types to container walls made of approximately 350 lb (158 kg). test double wall corrugated material. These changes effect a substantial cost reduction in the containers used for these applications.

It is a primary object of the invention to provide a novel reinforced corrugated container capable of safely holding flowable granulated materials and flowable gelatinous substances of relatively high density utilizing thinner than normal container walls and eliminating compartmentalization within the carton or wooden external structural framing as supplementary carton support structures.

Another object of the invention is to provide a novel reinforced container as aforesaid in which the corrugated carton, or an interior tubular liner, is provided with a retaining belt extending entirely peripherally thereabout and upward for a distance from the bottom of the carton or liner.

Yet another object of the invention is to provide a novel reinforced container as aforesaid wherein the reinforcing belt structure is made of a non-woven backing material with parallel disposed yarns laminated thereon and extending lengthwise of the belt structure, the belt being secured to the carton, or interior tubular liner, to thereby dimensionally stabilize the carton.

Thus, from one aspect, the invention provides a high strength reinforced container comprising a corrugated carton structure including means forming sidewalls, a top closure and a bottom closure, characterised by a wide reinforcing belt having a pair of side edges and a pair of opposite ends, said

belt being disposed effectively entirely peripherally around the sidewalls and secured thereto, said belt extending upward for a distance from substantially the bottom of said carton structure, and securing means securing the said opposite ends of said belt against relatively movement in belt loosening directions, said belt comprising a non-woven backing material to which is adhered a parallel array of yarns extending lengthwise of said belt, said yarns being of a type which exhibits minimal elongation under tension, and wherein said securing means comprises a patch made of the same material as said belt, said patch having upper and lower side edges and being adhesively secured to said belt with the yarns of the patch and belt being disposed in facing relation and sandwiched between the backing material of said belt and patch.

A further object of the invention is to provide a method of making the aforescribed reinforced containers.

Thus from another aspect, the invention provides a method of reinforcing a container against rupture and excessive deformation by utilization of a lengthwise substantially inextensible wide fabric belt having a pair of laterally spaced apart side edges and a pair of opposite ends and being of a type comprising a non-woven backing material to one surface of which is adhered a parallel array of yarns extending lengthwise of said belt, said yarns being of a type which exhibits minimal elongation under tension, being spaced closely together in parallel array at one edge of the belt, being relatively widely spaced at the other edge of the belt, and being continuously graded in spacing density between the two edges of the belt, said container being of the types comprising a corrugated carton structure including means forming sidewalls, a top closure and a bottom closure, the method comprising the steps of,

a) disposing said fabric belt lengthwise effectively completely peripherally around the sidewalls with the edge with closely spaced yarns positioned substantially at the bottom of the sidewalls and the edge with the widely spaced yarns positioned upward therefrom, and with the backing material disposed flatwise against the surface of the sidewalls,

b) adhesively securing the belt backing material to the sidewalls in the position aforesaid, and

c) securing the opposite ends of the belt against relative movement in belt loosening directions by adhesively securing to the belt a patch made of the same material as the belt with the yarns of the patch and belt being disposed in parallel facing relation and sandwiched between the backing material of said belt and patch.

Briefly, as will be subsequently described in connection with the drawings appended hereto, the corrugated cartons embodying the invention may be of the order of 35 to 50 inches (89 to 127cm) in height and somewhat greater in length and width, and are provided with an inside tubular rectangular liner and a two ply bottom pad fitted down inside the liner and adhesively secured to the inside bottom flaps of the

carton. In one embodiment of the invention there is disposed entirely peripherally around the outside of the carton sidewalls and extending upward for a distance from substantially the bottom thereof a belt of non-woven backing material with yarns laminated thereon and extending peripherally laterally completely around the carton. The belt yarns may be of any material which exhibits minimal elongation under tension. In another embodiment of the invention the belt is disposed around the tubular liner which as a unit fits within the carton.

The belt backing material may typically be of non-woven polyester and approximately 20" or so (50 cm) in width extending upward from substantially the bottom of the carton or liner, and the yarns may typically each be 1800 denier formed of approximately 250 fiberglass filaments and arranged with a side by side density of 20 to the inch (7.7 to the cm) at the bottom reducing to 5 to the inch (2 to the cm) at the top and graded in between. The belt is wrapped around the carton or liner with the backing material against the carton or liner and held thereto with several glue spots, with the ends of the belt brought in to abutment on the surface of the carton. A patch of the same material is then glued firmly over the butt joint with the filaments of the patch facing and adhered to the filaments of the belt.

Various embodiments of the invention will now be described with reference to the accompanying drawings wherein:

Figure 1 is an isometric view of a reinforced container according to the invention with the top flaps open and with a portion of a lower corner structure being sectioned away to disclose underlying details;

Figure 2 is an enlarged fragmentary section taken through the carton of Figure 1 as would be seen along the line 2-2 on Figure 1;

Figure 3 is a horizontal sectional view through the novel carton according to the invention as would be seen when viewed along the line 3-3 on Figure 2, and also disclosing a partially removed section of the bottom structure to disclose the underlying configuration;

Figure 4 is a fragmentary enlarged section through the wall of the reinforced container according to the invention as would be seen when viewed along the line 4-4 on Figure 3;

Figure 5 is an enlarged fragmentary corner detail of an alternate way of applying the locking patch to the reinforcing belt at the corner instead of on the face of a carton panel;

Figure 6 is an isometric exploded view of another form of reinforced container according to the invention in which the container liner is reinforced instead of the outer carton;

Figure 7 is an enlarged fragmentary view through the container structure of Figure 6 as would be seen when viewed along lines 7-7 on Figure 6; and

Figure 8 is a fragmentary enlarged section through the container wall as would be seen when viewed along lines 8-8 on Figure 7.

In the several figures, like elements are denoted by like reference characters.

Referring now to the drawings and first to Figures 1 to 4, there is seen a carton referred to generally as 10 having the usual top flaps 11, sidewalls 12, interior bottom flaps 13 and exterior bottom flaps 14, the carton being formed in the normal and usual structural fashion for such corrugated cartons. Disposed vertically within the carton is a rectangular liner tube 15 having its ends lapped at one corner by the flap 16. Disposed within the confines of the liner tube 15 and placed flatwise downward upon the interior bottom flaps 13 is a bottom pad 17 adhered to the upper surfaces of the interior bottom flaps 13 by adhesive 18.

Wrapped peripherally about the walls of the carton 10 for a distance extending upward from the bottom edge of the carton is a reinforcing belt 19 made of a non-woven backing material 20 which typically could be polyester, to which is adhered a plurality of side by side yarns 21 extending longitudinally of the length of the reinforcing belt and spaced laterally in a varying density arrangement as shown by the lines 22, the yarns being closely spaced at the bottom edge of the belt and gradually becoming wider in spacing towards the top of the belt. The yarns and their spacings typically could be 1800 denier yarns formed of 250 fiberglass filaments each at a density of 20 to the inch (7.8 to the cm) at the bottom edge of the belt reducing to 5 to the inch (2 to the cm) at the upper edge of the belt and graded therebetween.

As best seen in Figures 1 and 3, the ends of the reinforcing belt are abutted on one face of the carton as shown at 23, and a locking patch 24 is adhesively secured across the abutment line 23 to fixedly secure the ends of the reinforcing belt together and prevent their being separated under stress from the load within the carton. The patch 24 is shown with gradation lines in Figure 1, but it is to be understood that these gradation lines represent yarns on the inner face of the patch and not on the outer face. This is more clearly shown in Figure 4 where the patch is shown to be of the same structure as the belt and includes a non-woven backing portion 25 and an array of yarns 26. As also shown in Figure 4, the yarns and backing of the patch 24 are adhered to the yarns and backing of the reinforcing belt 19 by adhesive 27, with the yarns 21 and 26 facing one another. As shown in Figure 4, the yarns do not appear to be in contact with each other, and this could occur in the relatively widely spaced upper regions of the belt, but toward the lower regions of the belt where the density is much higher, the yarns 21 and 26 will be in close proximity or substantial engagement with one another at their points of adherence.

An alternative locking patch configuration, and a preferred one, is shown in the detail of Figure 5 which differs only from the structure shown in the other figures in that the ends of the reinforcing belt 19 are abutted at a corner of the carton instead of on a face of the carton, and the patch 24 is applied around the corner of the carton, all as shown in Figure 5.

Considering now Figures 6 to 8 there is seen a carton 10' having sidewalls 12' and a tubular liner 15' as in Figures 1 through 5, but wherein the reinforc-

ing belt 19' with its locking patch 24' is disposed about and adhesively tacked to the periphery of the liner 15' instead of about the outer lower periphery of the carton 10'. This to some degree protects the reinforcing belt.

#### Claims

1. A high strength reinforced container comprising a corrugated carton structure including means forming sidewalls, a top closure and a bottom closure, characterised by a wide reinforcing belt (19, 19') having a pair of side edges and a pair of opposite ends, said belt being disposed effectively entirely peripherally around the sidewalls and secured thereto, said belt extending upward for a distance from substantially the bottom of said carton structure, and securing means securing the said opposite ends of said belt against relative movement in belt loosening directions, said belt (19, 19') comprising a non-woven backing material (20) to which is adhered a parallel array of yarns (21) extending lengthwise of said belt, said yarns being of a type which exhibits minimal elongation under tension, and wherein said securing means comprises a patch (24, 24') made of the same material as said belt, said patch having upper and lower side edges and being adhesively secured to said belt with the yarns of the patch and belt being disposed in facing relation and sandwiched between the backing material of said belt (19, 19') and patch (24, 24').

2. A container as claimed in claim 1, wherein said carton structure includes a corrugated carton (10) having sidewalls (12), and a tubular liner (15) having sidewalls, the liner being disposed within said carton with the liner sidewalls in flatwise surface engagement with the inside surfaces of the carton sidewalls.

3. A container as claimed in claim 1 or 2, wherein said carton structure includes a corrugated carton (10) which comprises said means forming the sidewalls (12), a top closure (11) and a bottom closure (13, 14), the belt (19) being disposed around the carton sidewalls (12), externally thereof and secured thereto.

4. A container as claimed in claim 2, wherein the liner (15') comprises said means forming the sidewalls, the belt (19') being disposed around the liner sidewalls externally thereof and secured thereto.

5. A container as claimed in any preceding claim, wherein said opposite ends of said belt are disposed in substantial abutment, and said patch is adhered flatwise to said belt on opposite sides of said abutment.

6. A container as claimed in claim 5, wherein the opposite ends (23) of said belt (19, 19') are disposed on a flat sidewall surface of the sidewalls of said carton structure to which the belt is secured, and said patch (24, 24') is adhered to said belt and is disposed on said flat sidewall surface of said carton structure.

7. A container as claimed in any of claims 1 to 5, wherein at least two adjacent portions of the sidewalls of said carton structure to which the belt is secured meet along a generally vertically extending

line, wherein said opposite ends of said belt substantially meet from opposite directions at said generally vertically extending line, and wherein said patch is adhered flatwise to said belt and overlapping the ends thereof on opposite sides of said generally vertically extending line.

8. A container as claimed in any preceding claim wherein said belt is substantially one half to two thirds the height of said carton structure.

9. A container as claimed in any preceding claim, wherein the width of said patch between its upper and lower side edges is substantially the same as the width of said belt between its side edges.

10. A container as claimed in any preceding claim, wherein said yarns (21) are spaced closely together in parallel array at the edge of said belt nearest the bottom of the carton structure, are relatively widely spaced at the upper edge of said belt, and are continuously graded in spacing density between the two edges of said belt.

11. A container as claimed in any preceding claim, wherein the non-woven backing material (20) of the belt is made of polyester material and said yarns are made of fiberglass.

12. A container as claimed in any preceding claim, including a bottom pad (17) fitted inside the carton structure and adhered to the inside surface of the bottom closure of the structure.

13. A method of reinforcing a container against rupture and excessive deformation by utilization of a lengthwise substantially inextensible wide fabric belt (19, 19') having a pair of laterally spaced apart side edges and a pair of opposite ends and being of a type comprising a non-woven backing material (20) to one surface of which is adhered a parallel array of yarns (21) extending lengthwise of said belt, said yarns being of a type which exhibits minimal elongation under tension, being spaced closely together in parallel array at one edge of the belt, being relatively widely spaced at the other edge of the belt, and being continuously graded in spacing density between the two edges of the belt, said container being of the type comprising a corrugated carton structure including means forming sidewalls, a top closure and a bottom closure, the method comprising by the steps of,

a) disposing said fabric belt (19, 19') lengthwise effectively completely peripherally around the sidewalls with the edge with closely spaced yarns positioned substantially at the bottom of the sidewalls and the edge with the widely spaced yarns positioned upward therefrom, and with the backing material (20) disposed flatwise against the surface of the sidewalls,

b) adhesively securing the belt backing material (20) to the sidewalls in the position aforesaid, and  
c) securing the opposite ends of the belt against relative movement in belt loosening directions by adhesively securing to the belt a patch (24, 24') made of the same material as the belt with the yarns of the patch and belt being disposed in parallel facing relation and sandwiched between the backing material of said belt and patch.

14. A method as claimed in claim 13, wherein said carton structure includes a corrugated carton

(10,10') having sidewalls, and a tubular liner (15, 15') having sidewalls, the method including disposing the tubular liner within said carton in flatwise surface engagement with the inside surfaces of the carton sidewalls.

15. A method as claimed in claim 13 or 14, wherein said carton structure includes a corrugated carton (10) which comprises the means forming the sidewalls (12), top closure (11) and bottom closure (13, 14), the method including disposing the belt (19) around the carton sidewalls and adhesively securing the belt backing material to the carton sidewalls.

16. A method as claimed in claim 14, wherein said tubular liner (15') comprises the means forming the sidewalls, the method including disposing the belt (19') around the liner sidewalls, adhesively securing the belt to the liner sidewalls, securing the patch (24') to the belt, and then installing the liner (15') in the carton (10').

### Revendications

1. Boîte renforcée de grande résistance constituée d'une structure en carton ondulé comprenant des moyens formant des parois latérales, un couvercle supérieur et un couvercle inférieur, caractérisée par le fait qu'elle comprend une large ceinture de renfort (19, 19') comportant deux arêtes latérales et une paire d'extrémités opposées, ladite ceinture étant effectivement disposée sur tout le pourtour des parois latérales et fixée à ces parois, ladite ceinture s'étendant vers le haut sur une certaine distance sensiblement à partir du bas de ladite structure en carton et un moyen de fixation empêchant lesdites extrémités opposées de ladite ceinture de subir un mouvement relatif dans des directions de relâchement de la ceinture, ladite ceinture (19, 19') étant constituée en un matériau arrière non-tissé (20) sur lequel est collé un réseau parallèle de brins (21) orientés dans le sens de la longueur de ladite ceinture, lesdits brins étant d'un type qui présente un allongement minimal sous tension, et dans laquelle ledit moyen de fixation est constitué d'une pièce (34, 24') constituée du même matériau que ladite ceinture, ladite pièce comportant des arêtes latérales supérieure et inférieure et étant fixées par collage à ladite ceinture les brins de la pièce et ceux de la ceinture étant disposés face à face et pris en sandwich entre le matériau arrière de ladite ceinture (19, 19') et celui de la pièce (24, 24').

2. Boîte selon la revendication 1, dans laquelle ladite structure en carton comprend un carton ondulé (10) ayant des parois latérales (12), et une garniture tubulaire (15) comportant des parois latérales, la garniture étant placée à l'intérieur dudit carton avec les parois latérales de la garniture ayant leur surface à plat en contact avec les surfaces intérieures des parois latérales du carton.

3. Boîte selon la revendication 1 ou 2, dans laquelle ladite structure en carton comprend un carton ondulé (10) qui comporte lesdits moyens de formation des parois latérales (12), un couvercle supérieur (11) et un couvercle inférieur (13, 14), la ceinture (19) étant disposée autour des parois latérales du carton (12) à l'extérieur de ces derniers et fixée dessus.

4. Boîte selon la revendication 2, dans laquelle la garniture (15') constitue lesdits moyens de formation des parois latérales, la ceinture (19') étant disposée autour des parois latérales de la garniture à l'extérieur de ces parois et fixée dessus.

5. Boîte selon l'une quelconque des revendications précédentes, dans laquelle lesdites extrémités opposées de ladite ceinture sont disposées sensiblement bout à bout, et ladite pièce est collée à plat sur ladite ceinture par dessus les côtés opposés dudit assemblage bout à bout.

6. Boîte selon la revendication 5, dans laquelle les extrémités opposées (23) de ladite ceinture (19, 19') sont disposées sur une surface plane de paroi latérale desdites parois latérales de ladite structure en carton à laquelle la ceinture est fixée, et ladite pièce (24, 24') est collée sur ladite ceinture et disposée sur ladite surface plane de paroi latérale de ladite structure en carton.

7. Boîte selon l'une quelconque des revendications 1 à 5, dans laquelle deux parties adjacentes au moins des parois latérales de ladite structure en carton sur laquelle la ceinture est fixée se rejoignent le long d'une ligne orientée généralement dans la direction verticale, dans laquelle lesdites extrémités opposées de ladite ceinture se rejoignent sensiblement à partir de directions opposées sur ladite ligne orientée sensiblement dans la direction verticale, et dans laquelle ladite pièce est collée à plat sur ladite ceinture et dépasse les extrémités de ladite ceinture sur les côtés opposés de ladite ligne orientée généralement dans la direction verticale.

8. Boîte selon l'une quelconque des revendications précédentes, dans laquelle ladite ceinture a une largeur sensiblement comprise entre la moitié et les deux tiers de la hauteur de ladite structure en carton.

9. Boîte selon l'une quelconque des revendications précédentes, dans laquelle la largeur de ladite pièce entre ses arêtes latérales supérieure et inférieure est sensiblement la même que la largeur de ladite ceinture entre ses arêtes latérales.

10. Boîte selon l'une quelconque des revendications précédentes, dans laquelle lesdits brins (21) sont disposés en un réseau parallèle serré sur l'arête de ladite ceinture la plus proche du fond de la structure en carton, sont relativement écartés sur l'arête supérieure de ladite ceinture et dont la densité d'écartement varie progressivement entre les deux arêtes de ladite ceinture.

11. Boîte selon l'une quelconque des revendications précédentes, dans laquelle le matériau arrière non-tissé (20) de la ceinture est fabriqué en un matériau de polyester et lesdits brins sont en fibres de verre.

12. Boîte selon l'une quelconque des revendications précédentes, comprenant une plaque inférieure (17) adaptée à l'intérieur de la structure en carton et collée sur la surface intérieure du couvercle inférieur de la structure.

13. Procédé de renforcement d'une boîte contre la rupture et la déformation excessive par utilisation d'une large ceinture (19, 19') de tissu sensiblement non extensible sur sa longueur comportant une paire d'arêtes latérales latéralement espacées et une

paire d'extrémités opposées et étant d'un type constitué en un matériau arrière non-tissé (20) sur une surface duquel est collé un réseau de brins (20) parallèle orienté dans la direction de la longueur de ladite ceinture, lesdits brins étant d'un type qui présente un allongement minimum sous tension, étant étroitement rapprochés en un réseau parallèle sur une première arête de la ceinture, étant relativement très espacés sur l'autre arête de la ceinture, et ayant une densité d'espacement progressivement variable entre les deux arêtes de la ceinture, ladite boîte étant d'un type comprenant une structure en carton ondulé qui comprend des moyens pour former des parois latérales, un couvercle supérieur et un couvercle inférieur, le procédé comprenant les étapes suivantes:

a) mise en place de ladite ceinture de tissu (19, 19') dans le sens de la longueur de façon qu'elle entoure effectivement tout le périmètre des parois latérales avec l'arête ayant les brins étroitement rapprochés disposée sensiblement en bas des parois latérales et l'arête ayant les brins largement espacés disposée vers le haut de ces parois, et le matériau arrière (20) étant posé à plat contre la surface des parois latérales,

b) fixation par collage du matériau arrière de la ceinture (20) sur les parois latérales dans la position indiquée ci-dessus, et

c) fixation des extrémités opposées de la ceinture pour empêcher tout mouvement relatif dans des directions de relâchement de la ceinture en fixant par collage sur la ceinture une pièce (24, 24') fabriquée avec le même matériau que la ceinture en disposant les brins de la pièce et ceux de la ceinture en relation parallèle face à face et intercalés entre le matériau arrière de ladite ceinture et celui de la pièce.

14. Procédé selon la revendication 13, dans lequel ladite structure en carton comprend un carton ondulé (10, 10') ayant des parois latérales, et une garniture tubulaire (15, 15') comprenant des parois latérales, le procédé comprend l'introduction de ladite garniture tubulaire à l'intérieur dudit carton de manière que les surfaces de la garniture soient posées à plat en contact avec les surfaces intérieures des parois latérales du carton.

15. Procédé selon la revendication 13 ou 14, dans lequel ladite structure en carton comprend un carton ondulé (10) qui comporte les moyens formant les parois latérales (12), le couvercle supérieur (11) et le couvercle inférieur (13, 14), le procédé comprenant la mise en place de la ceinture (19) autour des parois latérales du carton et la fixation par collage du matériau arrière de la ceinture sur les parois latérales du carton.

16. Procédé selon la revendication 14, dans lequel ladite garniture tubulaire (15') comprend les moyens formant les parois latérales, le procédé comportant la mise en place de la ceinture (19) autour des parois latérales de la garniture, en fixant par collage la ceinture aux parois latérales de la garniture, la fixation de la pièce (24') sur la ceinture, et ensuite l'installation de la garniture (15') à l'intérieur du carton (10').

## Patentansprüche

1. Höchster verstärkter Karton, bestehend aus einer gewellten Kartonstruktur einschließlich einer die Seitenwandungen ausbildenden Anordnung, einen oberen und einen unteren Abschluß, gekennzeichnet durch ein breites verstärkendes Gurtband (19, 19') mit einem Paar Seitenkanten und einem Paar gegenüberliegender Enden, wobei das Gurtband effektiv über den gesamten Außenumfang der Seitenwandungen angeordnet und an diesen festgelegt ist, das Gurtband erstreckt sich im wesentlichen vom Bodenbereich der Kartonstruktur über eine Distanz nach oben, und Mittel zur Befestigung legen die beiden Gurtband-Enden gegen Relativbewegungen in den Gurt-Lockerungsrichtungen fest, das Material des Gurtbandes (19, 19') ist ein nicht-gewebtes Untergrundmaterial (20), auf dem parallel zueinander verlaufende Fäden (21) aufgebracht sind, die sich längs des Gurtbandes erstrecken, wobei diese Fäden aus einem Material bestehen, welches unter Spannung ein Minimum an Dehnung zeigt, und wobei das Mittel zur Befestigung ein Lappen (24, 24') ist, der aus dem gleichen Material besteht, wie das Gurtband, und der Lappen obere und untere Seitenkanten und durch Klebung am Gurtband mit den Fäden des Lappens und Gurtbandes gegenüberliegend ausgerichtet und zwischenliegend zwischen den Untergrundmaterial des Gurtbandes (19, 19') und den Lappen (24, 24') festgelegt ist.

2. Karton nach Anspruch 1, dadurch gekennzeichnet, daß die Kartonstruktur einen Wellpappkarton (10) mit Seitenwandungen (12), und eine schlauchförmige Auskleidung (15) mit Seitenwandungen einschließt, die Auskleidung innerhalb des Kartons angeordnet ist, mit Seitenwandungen der Auskleidung in flächiger Anlage an den innenseitigen Flächen der Karton-Seitenwandungen.

3. Karton nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Kartonstruktur einen Wellpappkarton (10) einschließt, der die Mittel zur Formgebung der Seitenwandungen (12), eines oberen Abschlußdeckels (11) und eines unteren Abschlußbodens (13, 14) umfaßt, wobei das Gurtband (19) um die Karton-Seitenwandungen (12), außenseitig derselben, angeordnet und an diesen befestigt ist.

4. Karton nach Anspruch 2, dadurch gekennzeichnet, daß die Auskleidung (15') Mittel zur Formgebung der Seitenwandungen derselben umfaßt, wobei das Gurtband (19') um die Seitenwandungen der Auskleidung, außenseitig derselben, angeordnet und an diesen befestigt ist.

5. Karton nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß gegenüberliegenden Enden des Gurtbandes im wesentlichen aneinanderstoßend plaziert sind, und der Lappen flächig auf dem Gurtband auf den gegenüberliegenden Seiten der Stoßlinie durch Klebung festgelegt ist.

6. Karton nach Anspruch 5, dadurch gekennzeichnet, daß die gegenüberliegenden Enden (23) des Gurtbandes (19, 19') auf den flachen Seitenwandungsflächen der Seitenwandungen der Kartonstruktur plaziert sind, auf der das Gurtband befestigt ist, und der Lappen (24, 24') am Gurtband



durch Klebung festgelegt und an den flachen Seitenwandflächen der Kartonstruktur angeordnet ist.

7. Karton nach einem der Ansprüche 1 bis 5, dadurch gekennzeichnet, daß zumindest zwei aneinandergrenzende Bereiche der Seitenwandungen der Kartonstruktur, an welchen das Gurtband befestigt ist, an einer generell vertikalen Linie zusammentreffen, und die gegenüberliegenden Enden des Gurtbandes aus entgegengesetzten Richtungen an der generell vertikalen Linie im wesentlichen aneinanderstoßen, und der Lappen durch Klebung flächig auf das Gurtband aufgebracht ist und die Enden desselben an den gegenüberliegenden Seiten der generell vertikal sich erstreckenden Linie überlappend zu liegen kommen.

8. Karton nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das Gurtband im wesentlichen die Hälfte bis zwei Drittel der Höhe der Kartonstruktur einnimmt.

9. Karton nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Breite des Lappens zwischen der oberen und unteren Seitenkante gleich der Breite des Gurtbandes zwischen dessen Seitenkanten ist.

10. Karton nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Fäden (21) abständig eng beieinander in parallelen Reihen an der Kante des Gurtbandes angeordnet sind, die nächst dem Boden der Kartonstruktur ist, relativ weite Abstände an der oberen Kante des Gurtbandes aufweisen, und in ihrem Abstand voneinander zwischen den beiden Seitenkanten des Gurtbandes kontinuierlich entsprechend abgestuft sind.

11. Karton nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das nicht-gewebte Untergrundmaterial (20) des Gurtbandes aus einem Polyester-Material hergestellt ist und die Fäden aus Glasfasern bestehen.

12. Karton nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß ein Bodenpolster (17) eingeschlossen ist, das innenseitig der Kartonstruktur eingepaßt und mittels Klebung an der Innenfläche des bodenseitigen Abschlusses der Struktur festgelegt ist.

13. Verfahren zur Verstärkung eines Kartons gegen das Aufreißen und die übermäßige Verformung durch die Verwendung eines in Längsrichtung im wesentlichen unausdehnbaren breiten Gewebe-Gurtbandes (19, 19') das lateral abständig ein Paar Seitenkanten und gegenüberliegend ein Paar Enden hat und eine Ausführungsform aufweist, bestehend aus einem nicht-gewebten Untergrundmaterial (20), auf dessen einer Seite parallel zueinander ausgerichtete Reihen von Fäden (21) aufgeklebt sind, die sich längs des Gurtbandes erstrecken, wobei die Fäden aus einem Material bestehen, welches unter Spannung ein Minimum an Dehnung zeigt, die parallelen Fadenreihen engabständig an einer Seitenkante des Gurtbandes angeordnet sind und relativ weite Abstände an der anderen Kante des Gurtbandes aufweisen, und zwischen den zwei Kanten des Gurtbandes in ihrer abständlichen Dichte kontinuierlich abgestuft sind, wobei der Container der Type, bestehend aus einer gewellten Kartonstruktur, Anordnungen zum Formen der Seitenwandungen, el-

ner oberen Verschuß- und einer unteren Bodenwandung einschließt, das Verfahren gekennzeichnet durch die Schritte,

5 a) Aufbringen eines Gewebe-Gurtbandes (19, 19') längs effektiv komplett um den Außenumfang der Seitenwandungen, mit den Kanten mit engabständlichen Fäden in einer Position im wesentlichen am Boden der Seitenwandungen und die Kante mit den weitabständlichen Fäden oberhalb dieser Position, und mit dem Untergrundmaterial (20) flächig gegen die Oberfläche der Seitenwandungen anliegend,

10 b) Festlegen des Gurtband-Untergrundmaterials (20) durch Klebung an den Seitenwandungen in der vorgenannten Positionierung, und

15 c) Festlegen der entgegengesetzten Enden des Gurtbandes gegen Relativbewegungen in den Gurt-Lockerungsrichtungen durch das Befestigen eines Lappens (24, 24') mittels Klebung auf dem Gurtband der aus dem gleichen Material besteht wie das Gurtband, mit den Fäden des Lappens und des Gurtbandes in Anordnung parallel zueinander gegenüberliegend und übereinandergeschichtet zwischen dem Untergrundmaterial des Gurtbandes und dem Lappen.

20 14. Verfahren nach Anspruch 13, dadurch gekennzeichnet, daß die Kartonstruktur einen Wellpappkarton (10, 10') mit Seitenwandungen, und eine schlauchförmige Auskleidung (15, 15') mit Seitenwandungen einschließt, das Verfahren schließt das Einbringen der schlauchförmigen Auskleidung in den Karton ein, mit flächiger Oberflächenanlage an den Innenseiten der Karton-Seitenwandungen.

30 15. Verfahren nach Anspruch 13 oder 14, dadurch gekennzeichnet, daß die Kartonstruktur einen Wellpappkarton (10) einschließt, der die Mittel zur Formgebung der Seitenwandungen (12) eines oberen Abschlußdeckels (11) und eines unteren Abschlußbodens (13, 14) umfaßt, das Gurtband (19) dabei um die Karton-Seitenwandungen angeordnet, außenseitig derselben und befestigt an diesen.

40 16. Verfahren nach Anspruch 14, dadurch gekennzeichnet, daß die Auskleidung (15') Mittel zur Formgebung der Seitenwandungen derselben umfaßt, das Verfahren das Aufbringen des Gurtbandes (19') um die Seitenwände der Auskleidung, die Befestigung des Gurtbandes mittels Kleber an den Seitenwänden der Auskleidung, das Festlegen des Lappens (24') auf dem Gurtband, und das Installieren der Auskleidung (15') im Karton (10') einschließt.

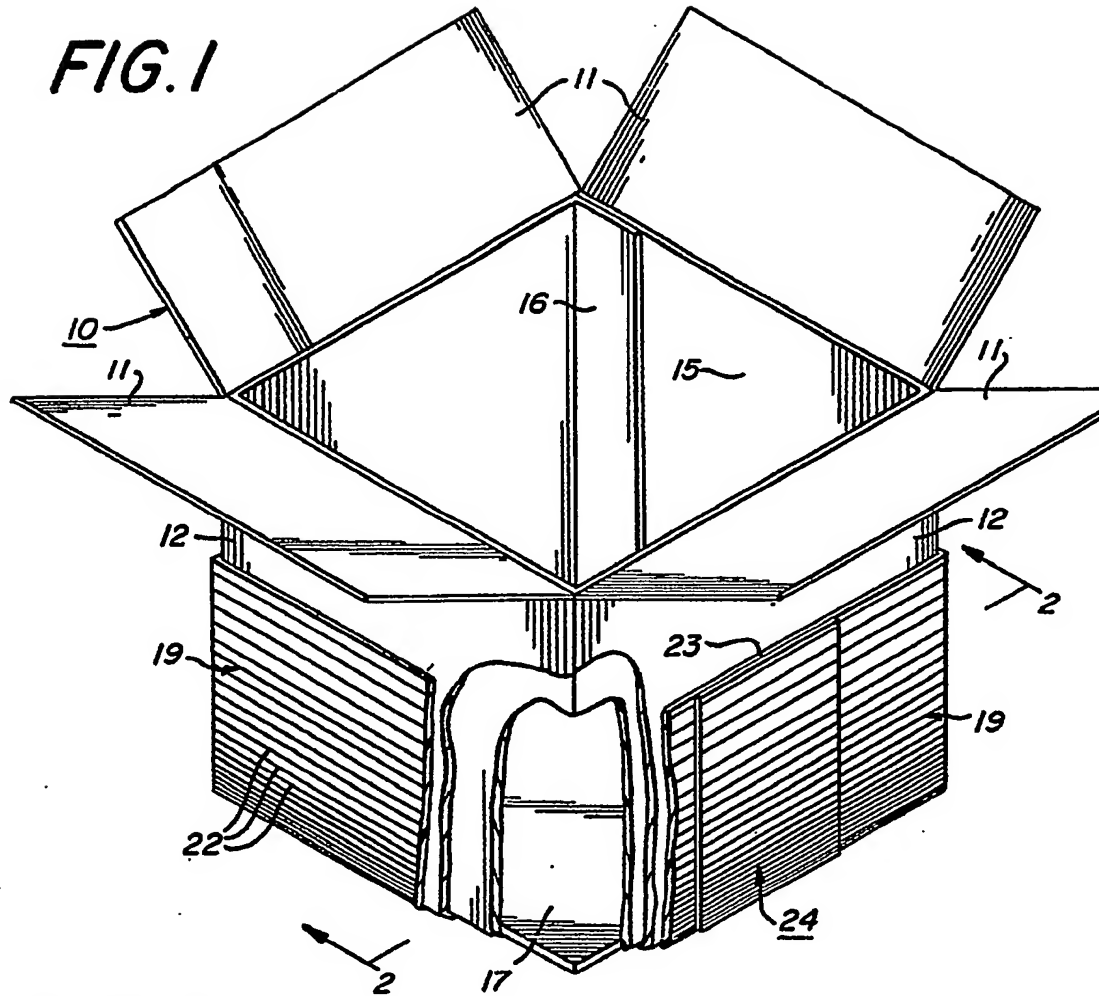
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65

**FIG. 1**



**FIG. 2**

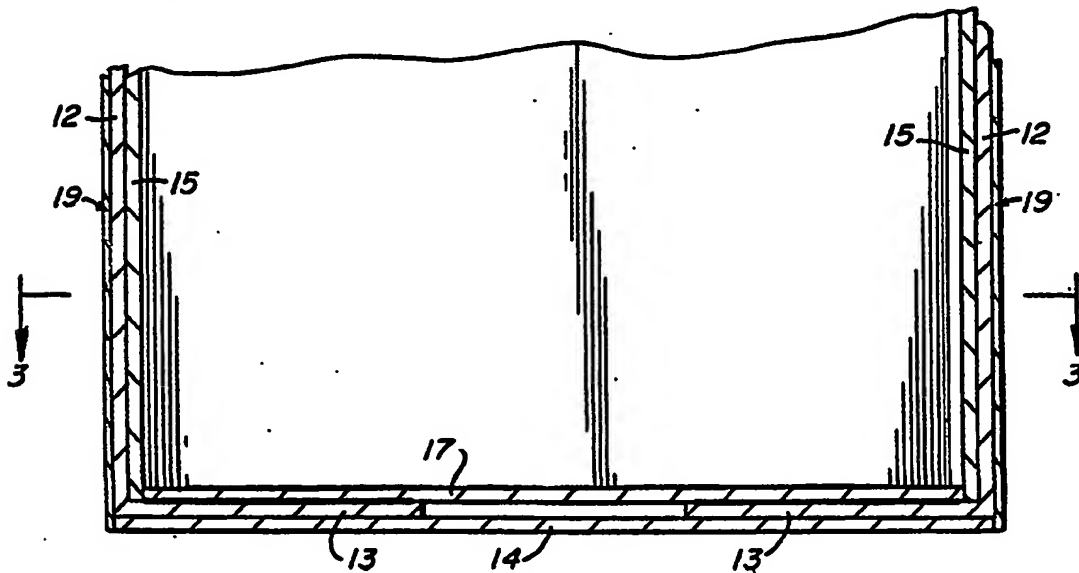




FIG. 3

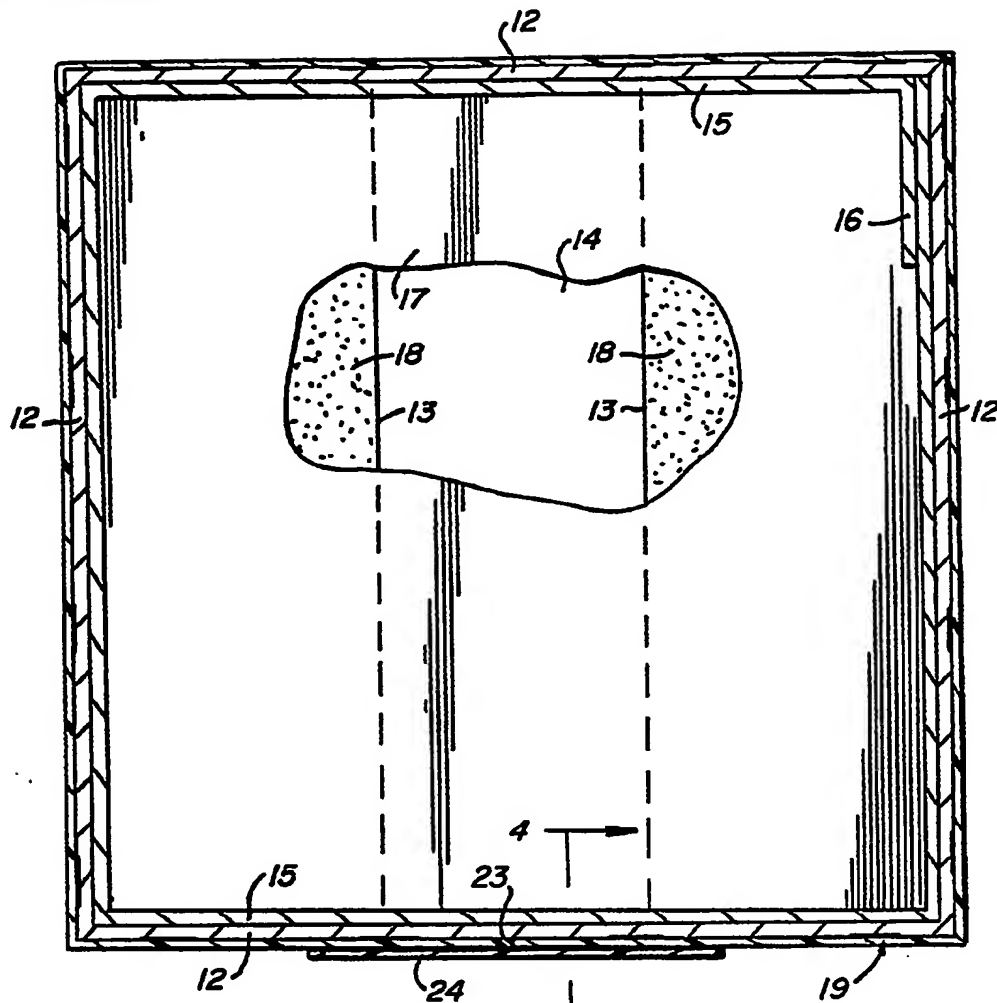


FIG. 4

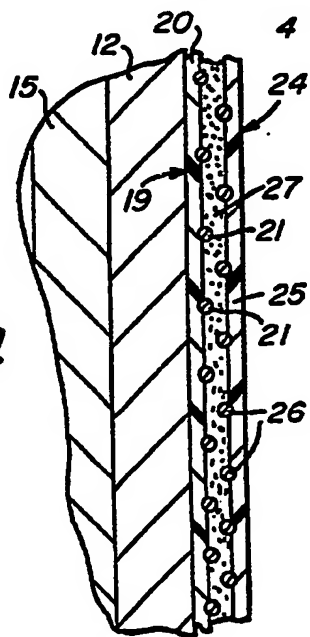
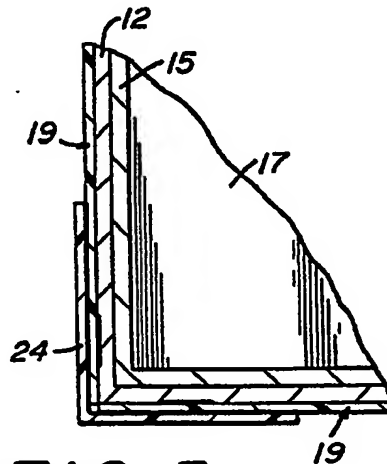
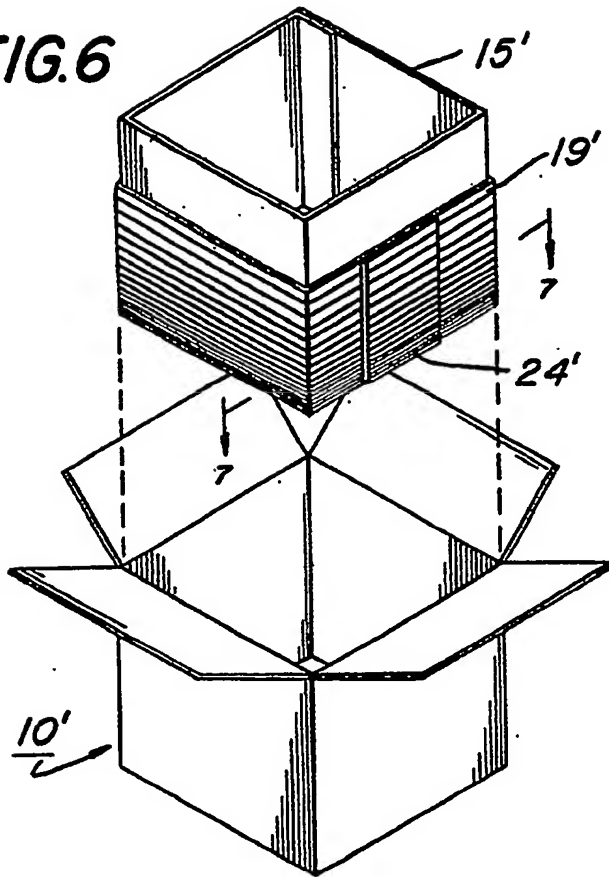


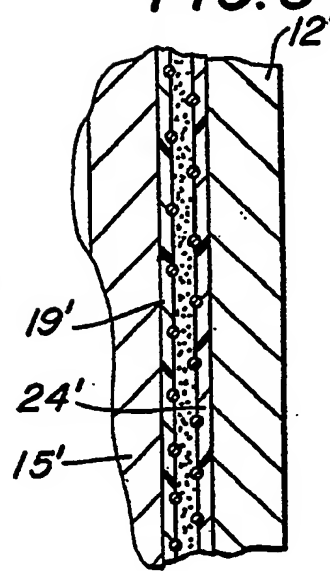
FIG. 5



**FIG.6**



**FIG.8**



**FIG.7**

